IOWA

PROFILES IN

soil health

James Baur
Van Meter, Iowa
5,000 acres
Crops: corn, soybeans, alfalfa, pasture
Planting: no-till, vertical tillage
Covers: cereal rye, rapeseed, oats, turnips

unlock the SECRETS IN THE SOIL

Farmer Adds Cover Crops to Suite of Practices.

Fifth-generation Madison County farmer James Baur is following his family's conservation traditions to help improve water quality in Badger Creek Lake, which was listed on the Iowa Department of Natural Resources (DNR) 303(d) list of impaired waters in 1998 due to excessive siltation and nutrient loading.

James Baur is the primary operator for his family's 5,000-acre diversified farm operation near Van Meter in northern Madison County. Acres not suited for row crop farming are used for hay or pasture, while other sections are enrolled in the Conservation Reserve Program (CRP).

USDA's Natural Resources Conservation Service (NRCS) included the Badger Creek Watershed in its National Water Quality Initiative (NWQI) in 2012. The watershed is one of five in Iowa to receive funding through NWQI, in which local NRCS and conservation partners help producers implement practices through a systems approach to control and trap nutrient and manure runoff.

Cereal rye begins to peek through corn residue last fall on James Baur's family farm near Van Meter.

Baur is one of the most active farmers leading the NWQI-funded water quality improvement effort. He has added 3,350 feet of terraces, with another 3,450

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feet more planned. He has also constructed 1.75 acres of grassed waterways and planted 130 acres of multi-species cover crops. He is one of about two dozen farmers currently participating in the NWQI Badger Creek Watershed project.

Anna MacDonald, Badger Creek Lake Watershed Coordinator, says siltation and nutrient loading are interfering with fish reproduction and limiting light to allow for aquatic vegetation to grow. "Phosphorus loading is the source of our nutrient problem and sediment is the cause of our siltation impairment," said MacDonald.

"We realize the need for and importance of conservation activities to help the future of our operation and the watershed we live in," said Baur.

Before the NWQI project, the Baurs implemented thousands of feet of terraces and grassed waterways, as well as field borders and buffer strips. He also updated his tillage practices over the past decade, to less soil-disturbing activities such as no-till and vertical-till on the majority of his cropland.

For the past six years Baur has planted cover crops following harvest. He feels the addition of cover crops, particularly on hilly cropland, will help alleviate erosion problems better than a single practice, like terraces.

"We are trying cover crops on different farms, and we are experimenting with different mixes," he said. "This year we have one farm with cereal rye and rapeseed. On some other farms we are using oats and turnips."

He said for the first time this year he planted cover crops for consecutive years on the same land to measure the soil health benefits. "With all of our extreme rain events, my hope is that cover crops will help reduce erosion, but I also want them to add organic matter to the soil," said Baur.

He says he has noticed cover crops affecting weed pressure, as well. "I have seen less weed pressure in the spring on our cover crop acres," said Baur. "It's changed our approach to herbicide use in the spring. Long-term, I think cover crops will reduce our herbicide use."

Field borders and terraces line Baur's cropland, protecting the soil from erosion.

Badger Creek Lake was constructed in 1980 to help prevent flooding along Badger Creek. The lake covers 269 acres in northeast Madison County, and includes its own 11,700-acre watershed. A 2011 watershed assessment identified several sources of sediment delivered to Badger Creek Lake, including gully erosion, ephemeral erosion from upland areas, and streambank erosion.

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